

REMARKS

This is intended as a full and complete response to the Final Office Action dated September 18, 2007, having a shortened statutory period for response set to expire on December 18, 2007. Applicants submit this response to place the application in condition for allowance or in better form for appeal. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1-44 are pending in the application. Claims 1-44 remain pending following entry of this response.

Specification Objections

The Examiner objects to the specification suggesting that it fails to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Specifically, the Examiner states that the limitation "to create a third column that..." is recited in claims 1, 22, and 43 is not supported in the specification of the disclosure.

Respectfully, Applicants point the Examiner to Specification, ¶¶ 3-7. These paragraphs provide an example where it would be useful to merge data from columns in separate database tables; specifically, a "Results Allergy A" table and an "Allergy A Results" table. In the example, both tables contain the same type of data, in that both contain names and address of patients, as well as contain this information "about an investigation concerning an allergy A which has been performed with respect to a multiplicity of individuals." The specification goes on to posit a scenario where:

[a] pharmaceutical company wants to determine triggering factors for the allergy A. To this end, the pharmaceutical company would analyze all collected data from both tables. To efficiently analyze the collected data, it is desirable to merge both tables into a single table.

Specification, ¶ 4. In other words, the Specification begins by describing a scenario where it would be useful to take data from a first table and a second table, and merge them into a single, third table. To do so, data from a column in the first table is merged with data from a column in the second table; namely, in this example, columns from the first and second tables that contain patient names are merged and columns from the

first and second tables that contain addresses are merged. Data for each of the merged columns may be stored in a column in the single, third table. The Specification describes the structure of the single third table as follows:

the database administrator could merge the columns "PatientName" and "Patient" into a column "Patient Name" and the columns "Address" and "Location" into a column "Patient Address" in order to provide **a single resultant table** "Allergy A Investigation."

Specification, ¶ 5 (emphasis added). Clearly, the description of merging the "PatientName" and "Patient" columns into a single column "Patient Name" provides support for a method step of "merging the first and second columns to create a third column that contains each data value stored in the first and second columns," as recited by the present claims. And the merging of the "Address" and "Location" columns provide an additional example. The Specification goes on to point out that:

However, one difficulty when merging independently created database tables consists in identifying correlated columns in the database tables which are mergeable to create a meaningful merged result.

Specification, ¶ 6. To address this problem, Applicants specification goes on to both describe and claim techniques for identifying mergeable data in a first and second database column. Among other examples, the specification provides:

... in response to user input, the first and second column or the at least two columns are merged into a single column.

... if the correlation value 152 for two given columns exceeds a predetermined threshold, it is assumed that the two given columns are correlated and can potentially be merged into a single column 45.

... a message is displayed to a user indicating the determined correlated columns. In one embodiment, the user can thus make a decision on whether to merge the determined correlated columns. Accordingly, in response to an appropriate input from the user, the determined correlated columns are merged.

Specification, ¶¶ 35, 45, 51. Based on the foregoing discussion, Applicants submit that the specification provides more than adequate support for the limitation of the present claims objected to by the Examiner. Accordingly, Applicants respectfully request that this objection be withdrawn.

Claim Rejections - 35 U.S.C. § 103

Claims 1-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Sandler et al.* (*Sandler* hereinafter) (US Patent No. 2003/0217033 A1, filed: May 17, 2002) in view of *Kaufman et al.* (*Kaufman* hereinafter) (US 2004/0073565 A1). Applicants respectfully traverse this rejection.

The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. See MPEP § 2142. To establish a *prima facie* case of obviousness three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Third, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP § 2143. The present rejection fails to establish at least the third criteria.

Regarding claims 1, 22, and 43:

Specifically, *Sandler* does not teach or suggest a “method for identifying correlated columns from database tables” that includes “determining correlation attributes for a first column and a second column from one or more database tables, the correlation attributes describing for each column at least one of the column and content of the column,” as recited by claim 1. Claims 22 and 43 recite a similar limitation. Nevertheless, the Examiner suggests that *Sandler* discloses this limitation as follows:

Fig. 18A, items 1806, and 1804, Page 17, [0235], lines 7 - 12; wherein the step of mapping which includes all of the values in field K1 1804 that have the same values in field F1 1806 corresponds to the step of determining the correlation attributes as claimed; wherein values F1 corresponds to the first column claimed; and wherein values in K1 corresponds to the second column claimed;

Final Office Action, p. 4. The Examiner then relies on this same material to argue that *Sandler* discloses the claimed steps of “identifying similarities between the first and second column on the basis of the comparison,” and “on the basis of the identified similarities, determining whether the first and second column are correlated,” and “upon determining the first and second columns are correlated, merging the first and second

columns to create a third column that contains each data value stored in the first and second columns,” as recited by claim 1. In fact however, the values in “field K1 1804 that have the same values in field F1 1806” do not teach or suggest “correlation attributes” as suggested by the Examiner. Instead, *Sandler* provides:

the field F1 1806 in table T1 1800 is mapped many-to-one to the field K 1808 in the table TARGET 1802. To perform this mapping, all of the values in field K1 1804 that have the same values in field F1 1806 must be combined to provide a value for field F 1810 in table TARGET 1802. In this example, a SUM operation is used to combine the values from field K1 1804.

Sandler, ¶ 235. The values in the field “K1” are not correlation attributes of the values in the field “F1” at all; instead, the field values are simply the data values of records in the entered in the “F1” and “K1” columns of the “T1” table. More generally the material cited by the Examiner is an example of an “aggregation” operation disclosed in *Sandler* used to combine values in a table. As disclosed in *Sandler*, “[s]uch aggregation operations are used to represent many-to-one relations, and occur only after the table rule has been applied, to convert a combined table (which results from application of various fuse, link, and loop operations) into the target table.” *Sandler*, ¶ 234. Thus, the “aggregation operation” converts one table into another. The specific Example cited by the Examiner includes a table from Figure 18A with the following values:

TableT1	
F1	K1
A	1
A	2
B	3
K	4
B	5

In this example, as part of the “aggregation operation” the repeated “A” values of “1” and “2” are summed to create an entry of “A” with a value of “3”. Similarly, the repeated “B” values of “3” and “5” are summed to create an entry of “B” with a value of “8”. No part of this process includes the claimed step of “determining correlation attributes for a first column and a second column from one or more database tables, as recited by claims 1, 23. Further, nothing in this material discloses the claimed steps of “identifying similarities between the first and second column on the basis of the comparison,” and

“on the basis of the identified similarities, determining whether the first and second columns are correlated.” Instead, this material describes an “aggregation operation” used to process certain entries in a table that result from “loop, fuse, and link” operations. Accordingly, Applicants respectfully request that the rejection of claims 1, 22, and 43 be withdrawn.

Regarding claims 2 and 23:

Claim 2 depends from claim 1 and further specifies a step of “determining whether the correlation value exceeds a predetermined threshold.” Claim 23 recited similar limitation. In rejecting this claim, the examiner suggests that *Sandler* discloses:

[a step of] determining whether the correlation value exceeds a predetermined threshold (Page 2, [0018], lines 6 - 9; is above a predetermined threshold; *Sandler*).

Final Office Action, p. 6. This passage provides:

In general, in another aspect, the invention relates to a method for external checkpointing. The method includes initially communicating a data table and a log comprising entries of data table transactions to a subscriber; and communicating additional log entries to the subscriber when they are received. The method includes determining that the number of log entries is above a predetermined threshold, applying the log entries to the data table, and communicating the updated data table to the subscriber.

Sandler, ¶ 18. This description of “method for external checkpointing” that includes “determining whether that number of log entries is above a predetermined threshold” has no relationship whatsoever to the claimed subject matter. As is well known, “checkpoint” refers to a synchronization point between data files and log files. The cited passage describes transaction processing that includes executing log entries once the number of log entries reaches “a predetermined threshold.” Clearly, the use of “a predetermined threshold” to determine when the number of log entries is above that threshold has nothing to do with the subject matter of “determining a correlation value indicating a degree of correlation between the first and the second column and determining whether the correlation value exceeds a predetermined threshold.” The former is related to the number of entries in a log file, whereas the claimed limitation is

directed to a degree of correlation between a first and second column. Accordingly, Applicants respectfully request that the rejection of claims 2 and 23 be withdrawn.

Regarding claims 6, 9, 11, and 14:

Claims 6, 9, 11, and 14 each depend from claim 1 and further characterize the correlation attributes. Claims 6, 9, 11, and 14 specify that the “correlation attributes” may be determined on the basis of: (i) metadata describing characteristics of the column (claim 6), (ii) statistical parameters associated with the column, (claim 9), (iii) ontological properties describing cognitive qualities associated with the column, (claim 11), and (iv) measurement units associated with the column. Claims 27, 30, 34, and 35 recite similar limitations, respectively. In rejecting these claims the Examiner cites to various portions of *Sandler* unrelated to the “aggregation operation” cited in the rejection of the underlying independent claim. Applicants submit that the isolated fragments cited by the Examiner fail to disclose the claimed characterizations of the “correlation attributes,” as recited by these claims. Accordingly, Applicants respectfully request that the rejection of claims 6, 9, 11, 14, 27, 30, 34, and 35 be withdrawn.

Regarding claims 3-5, 7-8, 10, 12-13, 15-16, 24-26, 28-29, 31-33, and 36-37:

Each of claims 3-5, 7-8, 10, 12-13, 15-16, 24-26, 28-29, 31-33, and 36-37 depend from one of claims 1 or 22. Accordingly, for all the reasons given above regarding independent claims 1 and 22, Applicant submits that these dependent claims are allowable and respectfully requests that the rejection of these dependent claims be withdrawn.

Regarding claims 17, 38, and 44:

Sandler does not teach or suggest a “method for identifying correlated columns from database tables” that includes a step of “determining a degree of correlation between the at least two columns using the determined metadata and the analyzed content.” Claims 38 and 44 recite a similar limitation. In rejecting these claims the Examiner again turns to the “aggregation operation” disclosed in *Sandler* used to

combine values in a column of a database table. Specifically, the current rejection provides:

(Page 17 and 18, [0235] and [0251], lines 8 - 15 and 3 - 10; respectively, wherein the step of mapping by combining the same values in fields corresponds to the step of determining the degree of correlation as claimed; wherein the "many-to-one" corresponds to the metadata claimed; wherein the values in the fields corresponds to the analyzed content claimed; and wherein the mapping after combining the values, for example: value of the field F 1802, corresponds to the degree of correlation claimed; *Sandler*);

Final Office Action, p. 12. Candidly, the process of "combining the same values in fields" in no way discloses the step of "determining the degree of correlation" between a first database column and a second database column. Instead, the material describes adding up each number in one field of a set of database records that share a value in another field of the set of database records. No "degree of correlation" is determined, calculated, or otherwise suggested by the "aggregation operation" disclosed in *Sandler*. Accordingly, Applicant submits that these independent claims are allowable and respectfully requests that the rejection of claims 17, 38, and 44 be withdrawn.

Regarding claims 18-21 and 39-42:

Each of claims 18-21 and 39-42 depend from one of claims 17 or 38. Accordingly, for all the reasons given above regarding independent claims 17 and 38, Applicant submits that these dependent claims are allowable and respectfully requests that the rejection of these dependent claims be withdrawn.

Conclusion

Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

If the Examiner believes any issues remain that prevent this application from going to issue, the Examiner is strongly encouraged to contact Gero McClellan, attorney of record, at (336) 643-3065, to discuss strategies for moving prosecution forward toward allowance.

Respectfully submitted, and
S-signed pursuant to 37 CFR 1.4,

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